

ABSTRACT OF THE DISCLOSURE

A wafer chuck is designed to allow the substrate to thermally deform during charged particle beam lithography. The wafer chuck includes a compliant layer disposed over an chuck body. During lithography processing the wafer is electrostatically held in
5 contact with a flexible compliant layer and the wafer is exposed to the charged particle beam resulting in thermal deformation of the wafer. The compliant layer deforms with the substrate and allows the wafer to deform in a predictable manner.